

NTUMUN 2021

# STUDY GUIDE



WHO



# WORLD HEALTH ORGANIZATION

## CHAIR INTRODUCTIONS

### YAMINI PRASHANTH

#### (HEAD CHAIR OF WHO)

Yamini Prashanth is a Year 2 Bioengineering and Business Major from Nanyang Technological University, Singapore. Yamini has been an avid MUNner from the age of 13, has participated in above a dozen MUNs, and notably, has won awards in every one of them. She also had the opportunity to chair a couple of international MUN conferences. When she isn't babbling about world affairs, you can probably find her writing, speaking, dancing, singing, or playing basketball. She is one of India's youngest published authors with 4 books to her name, the first one published when she was only 12 years old. She's India's youngest TedX speaker, having spoken at age 12. She also toured the country speaking to children about the marvels of reading and writing. She enjoys her extracurriculars, and is a trained Indian classical vocalist and Odissi dancer. Yamini is never more comfortable than when she's placed in a room full of people with whom she can mingle. What Yamini values most are integrity, variety, problem-solving, conversations, and experiences, all of which she intends to bring to her committee at NTUMUN2021.

### PRASHANT IYER

#### (ASST. CHAIR OF WHO)

Prashant Iyer is a high-school student stuck in his first year of IB at NPS International School in Singapore. Although he may have joined the world of public speaking and debate relatively late, his admiration and passion for it has never ceased to grow. While he has been to 7 MUN conferences in total and won awards in several of them, he is still new to the world of chairing, this being his second time. Apart from MUN, Prashant thoroughly enjoys computer programming and robotics, being the founder of his school's computer science and programming club, as well as a member of its robotics team. Prashant also enjoys reading about history, and has captained his school's A team in competitive history competitions that has won events at the Asian level. If he isn't out playing badminton, Prashant is likely to be found binge-watching Netflix shows or playing video-games without a break. He looks forward to seeing each and every one of you debate the topics at hand in NTUMUN 2021!

## SUHAANI NIGAM

### (ASST. CHAIR OF WHO)

Suhaani Nigam is a Year 1 Biological Sciences student in Nanyang Technological University, Singapore. Being someone who has constantly struggled with self doubt, public speaking and specifically MUN, has been a medium for her to realize that all that she blabbers is not useless. She has attended more than 7 conferences as a delegate, but this beginner level chair is determined to help beginner delegates to reach the best of their potential. You might spot Suhaani speaking her mind in uninvited discussions on world politics and human rights issues. Philosophy is Suhaani's second biggest obsession after food, being the founder of the Philosophy branch in the Science Club back in school, she has often found herself watching random videos and listening to podcasts about euthanasia, religion, ethics of stem cell research which often leads her into an existential crisis! She is also a passionate volunteer, and has been a part of organizations such as Riding for the Disabled, Singapore Hospice Care, Down Syndrome's Association and Singapore Association for the Deaf. She has just completed her first level of Singapore sign language so if you know some,

maybe try your luck to see if she can understand you.

## LEONARD PATRICK BROMOKUSUMO

### (ASST. CHAIR OF WHO)

My name is Leonard Patrick Bromokusumo, you can call me Leon for short. I am an aspiring student dwelling in the realm of International Relations in Universitas Gadjah Mada. To further support my endeavours, I have been active in world of MUN with UNODC being, so far, my council of choice. I am thrilled and very honored to be part of NTUMUN 2021; despite being held virtually, I am looking forward to fruitful and substantive discussions as well as brilliant and out of the box solutions that the delegates can come up with. Aside from highly academic activities, I am also passionate about coffee and currently mastering the art of manual brewing. Other than those intricacies, I devote myself to being active in multiple organizations within my university. Prepare your research, speak up, and see you in March!

## WELCOME LETTER



Greetings prospective delegates,

We, the team of WHO chairs would like to extend our warmest welcome and our heartiest congratulations to you for taking this first step in what will hopefully be a grand journey of debate, collaboration, and learning for you all.

MUN brings with it research, articulation, diplomacy, leadership, and lobbying, but most importantly, experience. MUN teaches one through experience, and in our humble opinion, that goes farther than anything taught in a regular classroom. While students in classrooms are taught exactly what happened in the past, or which decision or policy suits a country the best, a delegate at an MUN can discover these things on their own, allowing them to have a certain ownership of their discovery, and a platform to put it to the test. We encourage each and every one of you to make the best use of this gift by adopting an outlook of bold learning. We'd recommend taking every opportunity you can to learn from your chairs, your fellow delegates, your successes, and most importantly, your mistakes. Whatever resolution the committee arrives at, we hope each of you individually resolves to contribute fearlessly to the WHO at NTUMUN 2021, to the best of your abilities.

In COVID times, we are hesitant to make empty promises about what we can deliver, but what we can safely promise is that attending MUNs has shaped each of our personalities in ways that nothing else could have, and we are sure it'll have the same effect on you. Firstly, it opened us to the fact that path-breaking things are happening around the world every single day. Secondly, it ensured that we got acquainted with those who found this as fascinating as we did. Finally, we each observed that this journey transformed us into individuals who were more confident, more aware, more articulate, and certainly *more*, in most senses.

From our side, we are committed to making NTUMUN 2021 a positive, memorable, and enriching experience for all our delegates. A lot of aspects about the conference excites us. Firstly, in the midst of a pandemic, it has become increasingly evident that in the absence of health, all else comes to a standstill. It is thus our privilege to chair a

deliberation on matters of global health through a simulation of the WHO. Secondly, we are quite enthusiastic about chairing a beginner committee because we keenly recollect how much of our passion for MUN was ignited by our very first conferences, and are thus eager to “pass the baton” and share the thrill of MUN with a new batch of change-makers.

We look forward to meeting you and hope you too experience the transformative power of MUN which converted us from being in oblivious bliss to having informed opinions; from being self-conscious to being able to speak in front of crowds confidently, and from being mere spectators of world events to being participants. We have gotten a lot out of our experiences at MUNs, we hope and believe that NTUMUN2021 will be our opportunity to give a little something back.

Sic Parvis Magna, and suit up!

Yamini, Suhaani, Prashant and Leonard

# WORLD HEALTH ORGANIZATION

## INTRODUCTION TO COUNCIL



The World Health Organization (WHO) was established on 7 April 1948, shortly after the end of the Second World War. Today, it is headquartered at Geneva, Switzerland and boasts 194 member states.<sup>1</sup> To date, it has improved international health standards through a variety of means including large scale immunization, improving clean water access and sanitation, and responding to outbreaks and emergencies. The primary aim of the WHO is to 'direct and coordinate international health work through collaboration'.<sup>2</sup> Often, this aim has required the organization to work alongside other countries, UN organs, third party agencies as well as research institutions. In the long term, the WHO's goals involve reducing risk factors for chronic diseases, increasing awareness and understanding of health, developing action plans to tackle global health concerns, and promoting research about

health. Every five years, The General Programme of Work revisits the allocation of financial resources at disposal to the organization.

In the past, the WHO's work has revolved around world issues, and it has thus repeatedly proven its position as a prominent global organization.<sup>3</sup> For instance, it has dealt with global viruses such as zika, ebola, and yellow fever by providing humanitarian support, and has also carried out large-scale vaccination in countries where this was previously impossible. It has also worked with governments to improve the quality and accessibility of public healthcare. Additionally, it works on improving the mental health of refugees that have experienced trauma in nations experiencing conflict such as Syria.

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<sup>1</sup> "About WHO," *Who.int*, 2018, <https://www.who.int/about>.

<sup>2</sup> "WHO | Global Strategy: Overall Goal," *Who.int*, October 6, 2014, <https://www.who.int/dietphysicalactivity/goals/en/>.

<sup>3</sup> "Spotlights on Achievements," *World Health Organization*, April 13, 2017, <https://www.who.int/emergencies/achievements/en/>.



# TOPIC 1: REVIEW OF PANDEMIC MANAGEMENT POST COVID-19

## SUMMARY

The COVID-19 pandemic has undoubtedly dominated world affairs in 2020. The international community, both independently and in conjunction with the World Health Organisation implemented a range of interventions in order to alleviate the effects of the pandemic. However, there has been widespread criticism of both the WHO's policies and their implementation. Such complaints were typically centred on the WHO's inherent bias towards China, the inequitable distribution of WHO resources, the delayed response of the WHO at critical points during the pandemic, the rampant spread of misinformation on COVID-19, etc. There is no international consensus on the

validity and importance of a majority of the criticisms.

This simulation of the World Health Organisation aims to review the response of the international community to the COVID-19 pandemic through an analysis of the successes and failures of both the WHO and individual countries in their response to the pandemic, and a discussion of possible improvements to the policies and implementation methods of the WHO's pandemic management system so as to better contain such diseases in the future.

## INTRODUCTION

COVID 19 is the official name of the disease caused by the novel coronavirus Severe Acute Respiratory Syndrome (SARS)- CoV-2 which was first reported in humans in early December by the officials in Wuhan, the capital of Central China's Hubei province. While the origin of COVID 19 is still under investigation,

zoonotic spillover is the most widely accepted reasoning. The COVID 19 disease is a result of the coronavirus transmitting from animals to humans due to the higher and closer contact between the two. The novel coronavirus shows close genetic relations to SARS-CoV-1 and has been found to have an

ecological origin from bat populations. There has been evidence that countries such as Singapore, Vietnam and Hong Kong who were some of the worst affected by the 2002 to 2004 SARS-CoV-1 epidemic are able to better manage the current COVID-19 pandemic.<sup>4</sup>

While 70% of the cases in Wuhan during the early stage of the pandemic were linked to Wuhan's Hunan Seafood Wholesale Market, data was deemed to be insufficient to allow this market to be the source of this virus with full accuracy and credibility. The inadequate surveillance of wildlife and people who have frequent and close contact with wildlife (to identify the presence of high-risk pathogens) and the lack of market biosecurity concerning wildlife trade were considered some of the reasons leading to the spread of the virus. The delegates are encouraged to explore the role of a comprehensive investigation of the source of the virus for managing a pandemic and preventing future pandemics from happening.

After more than a full year since the first detected case in early December 2019<sup>5</sup>, as of 2021 February there have been a total of 109 million cases, out of which 60.9 million have recovered, but 2.4 million have succumbed to this virus.<sup>6</sup> The countries which have reported one of the highest mortality rates include Belgium with 178.95 deaths per 100,000,

United Kingdom with 137.83 deaths per 100,000, Italy with 137.61, Panama with 114.52 deaths per 100,000 and Mexico with 104.02 deaths per 100,000.<sup>7</sup> These figures reveal the extent of the spread of the virus, the competence of the healthcare system in different countries in managing the pandemic, and might also be an indication of the lack of widespread testing in most countries.

COVID-19 infected patients can exhibit a range of symptoms along with a variety of seriousness. The most common symptoms include fever, tiredness and dry cough, while some patients might suffer from aches and pains, sore throat, conjunctivitis, diarrhoea, sore throat, loss of taste and smell and rashes. While most patients will recover without hospitalization, others might develop serious symptoms such as difficulty in breathing, chest pain and loss of movement and speech, and hence require immediate medical attention. These symptoms are normally exhibited by people who are older than 60 years and who have underlying health conditions such as diabetes, heart diseases and conditions affecting the respiratory and immune system, can exacerbate the symptoms. Hence, it has been noticed that countries with a higher median age or a higher elderly population with a higher mortality rate, adds an extra level of difficulty and

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<sup>4</sup> World Health Organization: WHO, "Q&A: How Is COVID-19 Transmitted?," Who.int (World Health Organization: WHO, July 14, 2020), <https://www.who.int/vietnam/news/detail/14-07-2020-q-a-how-is-covid-19-transmitted>.

<sup>5</sup> "U.S. Covid Cases Found as Early as December 2019, Says Study." 2020. Bloomberg.com. Bloomberg. December 2020. <https://www.bloomberg.com/news/articles/2020-12-01/covid-infections-found-in-u-s-in-2019-weeks-before-china-cases>.

<sup>6</sup> "Coronavirus Update (Live): 109,234,022 Cases and 2,407,885 Deaths from COVID-19 Virus Pandemic - Worldometer." 2021. Worldometers.info. 2021. <https://www.worldometers.info/coronavirus/>

<sup>7</sup> "Indicator Metadata Registry Details," Who.int, 2018, <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/3130>.



complexity in managing the spread of the virus.<sup>8</sup>

COVID-19 primarily spreads through indirect, direct or close contact with people infected with the virus via nose or mouth secretions. Indirect transmission includes the contamination of objects or surfaces (called fomites) when infectious people leave their infected droplets on them. Other people may become infected when they touch these surfaces thus transferring the virus onto themselves when they touch their mouth, eyes or nose without washing or sanitizing their hands.<sup>9</sup> Safe physical distancing is a measure to avoid transmission through close contact, which requires individuals to be spaced at least 1 metre away from each other, as people closer than this distance can directly transmit infectious viral droplets into eyes, mouth or nose. Places of worship, nightclubs and other inadequately ventilated spaces where infected persons spend long periods of time with each other might show evidence of aerosol transmission of the virus between individuals, however more research is needed to ascertain the likelihood of airborne transmission in such settings.<sup>10</sup> The research about the different factors that might affect the transmission of COVID-19 is an essential aspect for governments to design policies that would lead to a better management of the pandemic.

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<sup>8</sup> "COVID-19 Transmission and Protective Measures| WHO Western Pacific," Who.int, 2018, <https://www.who.int/westernpacific/emergencies/covid-19/information/transmission-protective-measures>.

<sup>9</sup> CDC, "Scientific Brief: SARS-CoV-2 and Potential Airborne Transmission," Centers for Disease Control and Prevention, February 11, 2020,

The absence of global consensus on issues such as the source of the virus and its modes of transmission is an indication of the urgent requirement of an increase in transparency of the research conducted and the pandemic data collected, so that solutions can be found. Moreover, it is clear that the management of the pandemic requires large-scale social and behavioural changes, (for example: countries requiring the whole of its population to go to a total lockdown, limiting social interaction and affecting people's daily social practices) hence putting a huge psychological burden on individuals. The closing of schools and universities along with an increase in unemployment has increased the prevalence of mental health related problems experienced by individuals. Hence many governments have made it a priority to deal with the consequences of the pandemic, for example Singapore introducing many employment-related measures which are directed towards certain sectors such as aviation and tourism to support its citizens from the ill-effects of the recession of the global economy. Other significant issues that need urgent attention include the shortage of certain medical resources such as PPE kits and N95 masks in many countries which are experiencing a surge in cases.

Currently, there are 50 COVID-19 vaccine candidates in trial, of which 3 have successfully been approved for

<https://www.cdc.gov/coronavirus/2019-ncov/more/scientific-brief-sars-cov-2.html>.

<sup>10</sup> Michael Klompas, Meghan Baker, and Chanu Rhee, "What Is an Aerosol-Generating Procedure?," <https://jamanetwork.com/journals/jamasurgery/fullarticle/2774161>

public administration in many countries, namely from the pharmaceutical companies Pfizer, Moderna and Oxford-AstraZeneca. The Moderna and the Pfizer-bioNTech vaccine is a mRNA vaccine: unlike conventional vaccines which trigger an immune response when a weakened or inactivated germ is administered into our bodies<sup>11</sup>, mRNA vaccine provides the cells with instruction in the form of genetic code in mRNA on how to make a harmless piece of “spike protein”<sup>12</sup> (found on the surface of the COVID-19 virus), which will then help to trigger the immune response, and thus will produce antibodies if the real virus is to enter our body.<sup>13</sup> While the Oxford-AstraZeneca vaccine is made from the weakened version of the virus that causes common cold (adenovirus) from chimpanzees, modified to look more like coronavirus.<sup>14</sup>

The WHO has created a “COVID-19 candidate vaccine landscape”, which provides summary tables of all the COVID-19 vaccine candidates that are both in preclinical or clinical development, and tracks their progress

through the different phases for the vaccines which have passed the preclinical stage. Moreover, it has become a resource bank for published reports which entail the efficacy, safety, key attributes and immunogenicity of the candidate vaccines. It allows them to assess various criterias such as vaccine platform, schedule of vaccine, dosage, the route of administration and the measurement of clinical endpoints for vaccines in Phase 3, making potential manufacturers and distributors equipped with information and allowing the general public to be able to make an informed decision on which vaccine to choose.<sup>15</sup>

The latest revelation about the development of the COVID-19 situation comes from the UK<sup>16</sup> and South Africa, where a new variant of the COVID-19 virus called B.1.1.7 was first found, but has now been detected across the world. The new variant has an R0 of 1.5 to 3.5 as opposed to the old variant’s R0 of 0.4 to 0.7<sup>17</sup>, making the virus more transmissible. Moreover, evidence shows that this variant shows a “shift in age

<sup>11</sup> CDC, “Understanding mRNA COVID-19 Vaccines,” Centers for Disease Control and Prevention, February 11, 2020, <https://www.cdc.gov/coronavirus/2019-ncov/vaccines/different-vaccines/mrna.html>.

<sup>12</sup> Connor Bamford, “New Coronavirus Variant: What Is the Spike Protein and Why Are Mutations on It Important?,” The Conversation, December 22, 2020, <https://theconversation.com/new-coronavirus-variant-what-is-the-spike-protein-and-why-are-mutations-on-it-important-152463>.

<sup>13</sup> Diana Kwon, “The Promise of mRNA Vaccines,” The Scientist Magazine® (The Scientist Magazine, November 25, 2020), <https://www.the-scientist.com/news-opinion/the-promise-of-mrna-vaccines-68202>.

<sup>14</sup> BBC News. 2021. “Covid: What Is the Oxford-AstraZeneca Vaccine?” BBC News. BBC News.

February 9, 2021. <https://www.bbc.com/news/health-55302595>.

<sup>15</sup> “Item,” Who.int, 2018, <https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines>.

<sup>16</sup> Amanda Macias, “U.K. Government Confirms Second Strain of Coronavirus,” CNBC (CNBC, December 23, 2020), <https://www.cnbc.com/2020/12/23/uk-government-confirms-second-strain-of-coronavirus.html>.

<sup>17</sup> Md. Arif Billah, Md. Mamun Miah, and Md. Nuruzzaman Khan, “Reproductive Number of Coronavirus: A Systematic Review and Meta-Analysis Based on Global Level Evidence,” ed. Maria Elena Flacco, *PLOS ONE* 15, no. 11 (November 11, 2020): e0242128, <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0242128>

composition”, i.e. a larger share of reported cases of the new variant is found in individuals under age of 20 versus the old variant.<sup>18</sup> While the current studies do not support any

speculations of the new variant resisting the current vaccine-mediated immunity, many treatments such as convalescent plasma<sup>19</sup> might become ineffective.

## BACKGROUND



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<sup>18</sup> Molly Walker, “Just How Much More Transmissible Is the New Coronavirus Variant?,” Medpagetoday.com (MedpageToday, January 2, 2021), <https://www.medpagetoday.com/infectiousdisease/covid19/90499>.

<sup>19</sup> “Clinical Evidence Background” (), accessed January 24, 2021, [https://www.moh.gov.sg/docs/librariesprovider5/clinical-evidence-summaries/convalescent-plasma-infusion-for-covid-19-\(updated-25-august-2020\).pdf](https://www.moh.gov.sg/docs/librariesprovider5/clinical-evidence-summaries/convalescent-plasma-infusion-for-covid-19-(updated-25-august-2020).pdf).

## Timeline of COVID-19 and the WHO's involvement<sup>20,21,22</sup>

<u>Date</u>	<u>Event</u>
31 Dec 2019	The Wuhan Municipal Health Commission in China reports a series of cases of pneumonia in the city of Wuhan, Hubei. Local authorities initially claimed that most cases were found to be linked to the Huanan Seafood Market in Wuhan. In response to this, the WHO kept a close watch on the situation and requested Chinese authorities to begin performing laboratory tests and diagnosis.
10 Jan 2020	The WHO releases a series of technical guidelines to countries on how to detect, test, and manage potential COVID-19 cases. These guidelines were created taking into consideration past pandemics such as SARS and MERS. In short, these guidelines acted as a tool for countries to <b>assess their ability</b> to detect and respond to the coronavirus. This would be instrumental to the WHO in assessing the situation, planning for future risks, and coming up with new investigations and action plans.
21 Jan 2020	The WHO makes a field visit to Wuhan, China. The delegation involved in the visit ensured that there was an active screening process for those exiting the city of Wuhan's Tianhe Airport, and that control measures were being taken at the Zhongnan Hospital and its associated fever clinics. It also discussed measures to ensure that the public was completely aware of the virus, and that its severity was not underestimated.
30 Jan 2020	COVID-19 is declared a Public Health Emergency of International Concern (PHEIC) by the WHO. This decision was taken during the second meeting of the Emergency Committee convened under the International Health Regulations in response to the fact that the

<sup>20</sup> "UPDATED: Timeline of the Coronavirus | Think Global Health," Council on Foreign Relations, 2020, <https://www.thinkglobalhealth.org/article/updated-timeline-coronavirus>.

<sup>21</sup> "Coronavirus Disease (COVID-19) - Events as They Happen," Who.int, March 17, 2020, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>.

<sup>22</sup> "Timeline: WHO's COVID-19 Response," Who.int, 2018, [https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline?gclid=CjwKCAiAr6-ABhAfEiwADO4sfYIWeE2Efnw9VpOBGO9wdTV6v6SDLLu5h4xT4A5wUXaSW60NfUdsxoCHQoQAvD\\_BwE#event-204](https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline?gclid=CjwKCAiAr6-ABhAfEiwADO4sfYIWeE2Efnw9VpOBGO9wdTV6v6SDLLu5h4xT4A5wUXaSW60NfUdsxoCHQoQAvD_BwE#event-204).

	virus had spread to 5 WHO regions within a month. The committee concluded that to combat the spread of the virus, measures such as isolating and treating cases, contact tracing and social distancing would be necessary.
12 Feb 2020	More than 400 <b>researches</b> meet at the Geneva headquarters of the WHO to discuss research priorities. During this meeting, all researchers were updated of China's response to the virus, and came up with easily applicable diagnostic tests, preventive measures to halt the virus' spread, and considered existing vaccine or infection-preventing candidates.
5 Mar 2020	The Be Ready campaign is launched by the WHO. This was a social media campaign that was targeted at preparing countries for the virus. Its 3 core ideas were to Be Safe by adhering to public health measures, Be Smart by preventing the spread of misinformation through rumours, and Be Kind by looking out for those affected by the virus. <b>(which countries were these targeted to? was it mentioned anywhere whether this scheme was effective)</b>
9 Jul 2020	The WHO announces the Independent Panel for Pandemic Preparedness and Response (IPPR). The purpose of this panel would be to <b>evaluate</b> the global response to the pandemic. In turn, this would help it take <b>additional measures</b> in order to allow countries to better respond to the virus.
11 Aug 2020	Russia is the first nation to begin administering a vaccine called Sputnik V.
18 Nov 2020	Pfizer and BioNTech, and Moderna announce that interim results show their vaccines are 94% effective.
23 Nov 2020	AstraZeneca and Oxford announce that interim results show their vaccines are 70% effective.
8 Dec 2020	The UK identifies a second more transmissible variant of COVID-19.

## Overview of Current COVID-19 Guidelines from WHO

The WHO has made technical guidance on COVID-19 easily accessible through a detailed website with well categorized and organized information and research. These technical guidelines can be further classified as guidelines for prevention of future pandemics and guidelines for prevention of further spread of COVID 19. The latter includes scientific studies and recommendations for public health. A range of stakeholders including individuals, organizations, and governments can access this database for superior management of the pandemic, incorporating information and findings from other external credible resources.

The following are the list of topics that the WHO provides guidelines for: “Animal-human interface and food safety” and “Surveillance, case investigation and epidemiological protocols”, for better management of the consequences of the pandemic related to health, addressing issues such as “clinical care”, “critical preparedness, readiness and response”, “infection prevention and control” and the effect of the pandemic on other “essential health services” to recommendations and information regarding the social impact of COVID 19, including titles such as “Travel, Points of Entry and Border Health” and “Schools, businesses and institutions”.<sup>23</sup>

## DEFINITIONS

- **Pandemic:** Pandemic is an epidemic which occurs worldwide or over a wide area, crossing international boundaries and affecting a very large number of people.<sup>24</sup>
- **Infodemic:** Infodemic is caused by an overabundance of misinformation, which includes deliberate attempts to disseminate wrong information, undermining public health measures and response, hence harming people’s physical and mental health. It might endanger countries’ ability to stop the pandemic by advancing the alternative agendas of groups or individuals.<sup>25</sup>

<sup>23</sup> “Technical Guidance.” 2018. Who.int. 2018. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance>.

<sup>24</sup> “WHO | the Classical Definition of a Pandemic Is Not Elusive,” *Who.int*, July 2011, <https://www.who.int/bulletin/volumes/89/7/11-088815/en/#:~:text=A%20pandemic%20is%20defined%20as,are%20not%20considered%20pandemics>.

<sup>25</sup> World Health Organization: WHO, “Managing the COVID-19 Infodemic: Promoting Healthy

Behaviours and Mitigating the Harm from Misinformation and Disinformation,” *Who.int* (World Health Organization: WHO, September 23, 2020), <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation#:~:text=An%20infodemic%20is%20an%20overabundance,will%20continue%20to%20thrive..>



- **Pathogen:** A microorganism (such as bacteria, virus, fungi, etc.) that can cause disease.<sup>26</sup>
- **Virus:** A virus is a pathogen comprising a small collection of genetic code (DNA or RNA) surrounded by a protein coat.
- **Vaccine:** A vaccine is a product that aids the immune system of an organism in the provision of immunity against a particular disease-causing microorganism.<sup>27</sup>
- **Immunisation:** Immunisation is the process by which immunity against a particular disease is conferred to an individual via vaccination.<sup>28</sup>
- **Private Sector:** The private sector is the portion of the economic system of a nation that is operated by companies and individuals as opposed to the government.<sup>29</sup>
- **Zoonotic spillover:** Zoonotic spillover is the transmission of pathogens from a vertebrate animal to a human, which requires epidemiological, ecological and behavioral determinants of pathogen exposure to align.<sup>30</sup>
- **Mutation:** Mutation is the change in a DNA sequence due to copying mistakes during cell division, exposure to ionising radiation, exposure to chemicals capable of causing mutations, and infection by virus.<sup>31</sup>
- **Strain:** Strains are variants of the original virus brought about by mutations, allowing the mutated microorganism to elude the immune system of a host immune to the original virus.<sup>32</sup>
- **Frontline Healthcare Workers:** Individuals serve as a direct link between populations and healthcare systems (typically in low and middle income settings) through a variety of interventions such as, but not limited to providing

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<sup>26</sup> "Oxford Languages and Google - English | Oxford Languages," Oup.com, 2020, <https://languages.oup.com/google-dictionary-en/>.

<sup>27</sup> "Oxford Languages and Google - English | Oxford Languages," Oup.com, 2020, <https://languages.oup.com/google-dictionary-en/>.

<sup>28</sup> "Oxford Languages and Google - English | Oxford Languages," Oup.com, 2020, <https://languages.oup.com/google-dictionary-en/>.

<sup>29</sup> "Oxford Languages and Google - English | Oxford Languages," Oup.com, 2020, <https://languages.oup.com/google-dictionary-en/>.

<sup>30</sup> Raina K. Plowright et al., "Pathways to Zoonotic Spillover," *Nature Reviews Microbiology* 15, no. 8 (May 30, 2017): 502–10, <https://www.nature.com/articles/nrmicro.2017.45>.

<sup>31</sup> "Virus Strains," Science Learning Hub (Science Learning Hub, 2020), <https://www.sciencelearn.org.nz/resources/184-virus-strains>.

<sup>32</sup> "Virus Strains," Science Learning Hub (Science Learning Hub, 2020), <https://www.sciencelearn.org.nz/resources/184-virus-strains>.

immunisation, treating common infections, identifying health concerns, and serving as sources of information on diseases with high mortality rate.<sup>33</sup>

- **Aerosol Particles:** Minute respiratory particles, which are light and small enough to be able to remain suspended in the air for a very long time, and travel beyond 6 ft from the source and also have the ability to penetrate through surgical masks. N95 respirators and rooms negative air flow are some of the ways to prevent transmission through aerosol particles.<sup>34</sup>
- **Basic reproduction number (R0):** R0 of an infection is the expected individuals that are infected by one case in the population, assuming that all are susceptible to the virus and no one is immunized naturally or through vaccines, infectious disease such as measles has a R0 of 12 to 18 and seasonal influenza with a H0 of 0.9 to 2.1.<sup>35</sup>
- **Convalescent Plasma:** A treatment where blood plasma from a person who has recovered containing antibodies is administered to those with the infection, reducing symptoms and mortality.<sup>36</sup>
- **Immunogenicity:** Ability of a foreign substance (such as antigen) to provoke an immune response, which can be categorized as either desirable (the response caused by vaccines) or undesirable.<sup>37</sup>

## SCOPE OF DEBATE

The scope of debate is primarily an analysis of the successes and failures of both the WHO and individual countries in their response to COVID-19.

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<sup>33</sup> "Who They Are," Frontline Health Workers Coalition, December 5, 2011, <https://www.frontlinehealthworkers.org/who-they-are>.

<sup>34</sup> Michael Klompas, Meghan Baker, and Chanu Rhee, "What Is an Aerosol-Generating Procedure?," *JAMA Surgery* 156, no. 2 (February 1, 2021): 113, <https://jamanetwork.com/journals/jamasurgery/fullarticle/2774161>.

<sup>35</sup> Wikipedia Contributors, "Basic Reproduction Number," Wikipedia (Wikimedia Foundation, February 11, 2021), [https://en.wikipedia.org/wiki/Basic\\_reproduction\\_number](https://en.wikipedia.org/wiki/Basic_reproduction_number).

<sup>36</sup> "Clinical Evidence Background" (), accessed January 24, 2021, [https://www.moh.gov.sg/docs/librariesprovider5/clinical-evidence-summaries/convalescent-plasma-infusion-for-covid-19-\(updated-25-august-2020\).pdf](https://www.moh.gov.sg/docs/librariesprovider5/clinical-evidence-summaries/convalescent-plasma-infusion-for-covid-19-(updated-25-august-2020).pdf).

<sup>37</sup> "Immunogenicity - an Overview | ScienceDirect Topics." 2018. Sciencedirect.com. 2018. <https://www.sciencedirect.com/topics/medicine-and-dentistry/immunogenicity>.

## SUCSESSES OF THE WHO IN FIGHTING COVID-19

The WHO has aided countries substantially in preparing for and responding to the coronavirus. The Preparedness and Response Plan was created to highlight the major actions a country should take as well as an overview of the resources required to carry out these actions to combat COVID-19. This plan is constantly updated as new information is validated about this virus. Additionally, the WHO set up the COVID-19 Solidarity Response Fund in order to provide better care to patients, adequate resources to frontline workers, and sufficient financing for research and development into immunisation. This fund has till date raised over \$800 million.

The WHO has also played a pivotal role in ensuring that frontline workers receive the vital supplies they require to combat the virus. So far, the organization has shipped more than 2 million items of protective equipment to over 133 countries, a number that is projected to continue increasing as the fight against the coronavirus progresses. The WHO is currently collaborating with the International Chamber of Commerce, the World Economic Forum, and other private sector agencies to boost the production and distribution of essential medical supplies.

The training of health care workers has been another key point of action for the WHO. It set up an online tool, OpenWHO, to share key, often life saving information to frontline workers. This

platform allowed users to take a series of online courses revolving around public health expertise, which has today been used by over 1.2 million individuals. Moreover, the WHO's Global Outbreak Alert and Response Network (GOARN) has been critical in ensuring that the right technical expertise has been present where it has been needed the most all around the world.

Finally, the WHO concentrated a sizable portion of its efforts into searching for an effective vaccine. In February 2020, it brought together 400 of the world's leading researchers in order to decide what it had to prioritise when it came to research. It also launched a 'Solidarity Trial' using pre-existing drugs in over 90 countries to test whether existing drugs could slow down the spread of, or even cure the coronavirus. The WHO had also set up a set of protocols regarding research that are in use in over 40 countries to speed up the development of a vaccine. As of December 2020, there are over 3 working vaccines, and their success could be attributed in part to the WHO.<sup>38</sup>

Despite its many successes, there has been global criticism of multiple aspects of the World Health Organisation's response to COVID-19. Such criticism was centred around the following:

### **Bias towards China**

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<sup>38</sup> "5 Reasons the World Needs WHO, to Fight the COVID-19 Pandemic," UN News, April 9, 2020, <https://news.un.org/en/story/2020/04/1061412>.

The WHO has come under fire for its apparent bias towards China which came to light in the course of the COVID-19 pandemic. Countries cited the fact that the WHO relayed information it received from the Chinese officials verbatim without conducting an independent review of the coronavirus situation in China until end January, when WHO officials were first granted access to the country. Following the inspection, the WHO issued a statement of praise for the Chinese government's commitment and transparency, which it claims was only

because further access and control in China required extremely diplomatic measures to be taken. They further stated that there would be no need to declare the outbreak a global health emergency, yet it was declared a public health emergency of international concern just a week after this announcement. Another factor exhibiting WHO's partiality towards China could be the exclusion of Taiwan (as a separate nation) from the organisation due to objections from China.

## SPREAD OF MISINFORMATION

The WHO has been criticised for failing to prevent the spread of misinformation regarding the virus. Often, to disseminate information about COVID-19 to public authorities quickly, the media is under pressure to speed up the process of vetting, or screening, that normally takes place before a scientific article is published. During COVID-19, preprint servers, that do not have a vetting process, have gained popularity, where researchers can share their work immediately. A study at Cornell

University analysed over 38 million English texts published between January and May of 2020. Over a million of this reported misinformation about COVID-19. Often, the misinformation was regarding 'miracle cures': drugs that were not scientifically proven to be effective against the virus, but were reported as a working cure. A study at Oxford University found that the majority of fake news regarding the pandemic is spread on social media, by politicians, and by celebrities.<sup>39</sup>

## DELAYED RESPONSE

There have been several claims that the WHO could have been much more proactive in its response to COVID-19. The WHO was reluctant to declare COVID-19 a global health emergency till March 11th, when matters escalated; until which time they also remained steadfast in their opinion that travel

restrictions on China were not necessary. It is the opinion of experts that WHO's delayed response dramatically decreased the time that countries had to prepare for the subsequent influx of patients hospitalised due to COVID-19, and bred a general reluctance in governments to

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<sup>39</sup> "A Guide to Overcoming COVID-19 Misinformation," National Geographic, October 22, 2020, [https://www.nationalgeographic.com/science/2020](https://www.nationalgeographic.com/science/2020/10/10/guide-to-overcoming-coronavirus-misinformation-infodemic/)

[0/10/guide-to-overcoming-coronavirus-misinformation-infodemic/](https://www.nationalgeographic.com/science/2020/10/10/guide-to-overcoming-coronavirus-misinformation-infodemic/).

take tough decisions in a timely manner. Some posit that the WHO's deference to China was the reason for the delays. The WHO has made several statements of defence, alluding to the fact that they provided member states with a

“continuous flow of information” to tackle the pandemic; and were careful not to make premature declarations so as not to jeopardise the prosperity of its member nations unnecessarily.

## DISPROPORTIONATE DISTRIBUTION OF RESOURCES

During this pandemic, the supply of vital resources (such as PPE kits, masks, ventilators, vaccines and testing kits) became limited and restricted. The deep-rooted social inequities put many ethnic and racial minorities at an increased risk of dying due to an unfair distribution of those limited resources within countries. Along with this intranational inequality, the disparity of countries in terms of income, geopolitical relations, development and efficiency of its healthcare system, and the stability of its government affected the distribution and allocation of such resources between international borders. For example WHO has recognized that it becomes its responsibility to assist health systems, international agencies and governments to provide adequate quality resources for all, by taking into consideration the

ethics of setting priorities when distributing and allocating resources at the times of scarcity.<sup>40</sup> Hence, it becomes an utmost necessity for the guidelines to clearly elaborate on the procedure or the mechanism that should be employed by such stakeholders when allocating resources to tackle the pandemic. It should clarify on the different principles that could be adopted when decisions are being made regarding the prioritization of distribution of resources in an equitable manner, which are specific and mindful of the country's context with regards to the extent of the spread of the pandemic and the social, economical, geopolitical and technological level of the country or a specific region, to tackle the issue of disproportionate distribution of resources at the intra and international levels.<sup>41</sup>

## INCLUSION AND AVAILABILITY OF NEW RESEARCH ON COVID-19 BY WHO

It is not unusual to hear about the constantly changing guidelines of WHO and state governments on managing and living with COVID 19. These changing guidelines are a result of the months of research on the virus, the ways its spread

can be contained and its effect on the public. Currently, WHO has created a database for global literature on the research and findings about COVID 19. The database includes COVID-19 technology access pool (C-TAP) which

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<sup>40</sup> “Question and Answers Hub,” Who.int, 2018, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/coronavirus-disease-covid-19-ethics-resource-allocation-and-priority-setting>.

<sup>41</sup> “COVID-19: How Best to Allocate Scarce Medical Resources - IMF F&D,” Imf.org, 2020, <https://www.imf.org/external/pubs/ft/fandd/2020/04/allocating-scarce-medical-resources-during-the-COVID19-pandemic-bloom.htm>.

aims to compile all the shared and relevant data from existing mechanisms and calls to different organizations and individuals to voluntarily share COVID-19 technology related scientific advancements, intellectual property, knowledge and data. (6) However, a creation of a database might be misleading as it might contain all the research that has been conducted, including outdated information. Hence, it is important for guidelines to ensure that the research database is updated and edited with comments and remarks according to the progress of new research being conducted making it clear and unambiguous for users of the research data and findings.<sup>42</sup>

While this might create an elaborate database and address the availability of the research already conducted to tackle the pandemic, the guidelines should mention issues regarding the non-inclusive nature of the research conducted on COVID-19.<sup>43</sup> The

guidelines should mention how research can become more inclusive for groups which are disproportionately affected by COVID-19 and those who have been historically neglected by research, including elderly population, ethnic and racial minorities, and socioeconomically deprived individuals.<sup>44</sup> The guidelines should also incorporate provisions that incentivise research and development during pandemics, without which testing kits, cures, vaccines etc. could not have developed. Such provisions may include actions that the WHO took in this direction during the COVID 19 pandemic, and actions the WHO could have taken in this direction in hindsight, that might have accelerated such processes. It might also be prudent to discuss how governments can themselves incentivise innovation in times of global health crises, without the involvement of external organisations such as the WHO which might re-allocate the saved resources to more critical interventions.<sup>45</sup>

## LIMITED GUIDANCE ON COUNTRY-LEVEL POLICY CREATION AND IMPLEMENTATION

It is important to note that each country has a different outlook on the importance and validity of each of the issues mentioned above. Each country also has a different perspective on

whether the source of each problem is that the existing guideline in place to address such a problem is flawed or inadequate, or that the WHO and/or individual countries failed to properly

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<sup>42</sup> "Global Research on Coronavirus Disease (COVID-19)," Who.int, 2018, <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/global-research-on-novel-coronavirus-2019-ncov>.

<sup>43</sup> CDC, "Health Equity Considerations and Racial and Ethnic Minority Groups," Centers for Disease Control and Prevention, February 11, 2020, <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html>.

<sup>44</sup> Witham, Miles D, Eleanor Anderson, Camille B Carroll, Paul M Dark, Kim Down, Alistair S Hall, Joanna Knee, et al. 2020. "Ensuring That COVID-19 Research Is Inclusive: Guidance from the NIHR INCLUDE Project." *BMJ Open* 10 (11): e043634. <https://doi.org/10.1136/bmjopen-2020-043634>.

<sup>45</sup> Miles D Witham et al., "Ensuring That COVID-19 Research Is Inclusive: Guidance from the NIHR INCLUDE Project," *BMJ Open* 10, no. 11 (November 2020): e043634, <https://bmjopen.bmj.com/content/10/11/e043634>.



implement the existing guidelines. Therefore, one of the aims of this committee is to unify the varying perspectives as far as possible through deliberation. In the course of debate, each of the above-mentioned issues should be assessed for its validity and classified as either an inherent issue with the existing guideline or an issue in the implementation of an existing guideline.

Having addressed the successes and failure of the interventions of the WHO, the committee must proceed to analyse interventions implemented by various governments within countries, the factors that made such interventions succeed or fail, and the applicability of such interventions in a global context. (Some examples are illustrated under 'Key Stakeholders'). Delegates may benefit from reading an article from The Lancet titled "Lessons Learnt from easing COVID 19 restrictions: an analysis of countries and regions in Asia Pacific and Europe".

Based on the analysis of the response of both the WHO and individual countries to COVID 19, the committee must consider either the modification or complete redrafting of the existing WHO protocol and guidelines to pandemic management. Such a document must reiterate the policies behind the successes of WHO and individual countries, and address the policies behind their failures.

There is further a need to ensure that the resultant document is applicable to all countries, despite their varying economic, political, and humanitarian contexts. There are typically two ways to achieve such an objective: universalisation or customisation. Universalisation requires the guidelines to be broad frameworks that each country can implement differently based on its context. Customisation requires countries to be classified into categories based on their contexts, and for guidelines to be tailored separately to each category of country. The committee must deliberate on the superior method, and how to achieve it via policy.

## KEY STAKEHOLDERS

### UNITED STATES OF AMERICA

The United States of America is the WHO's top donor, with the investment of over US\$ 945.6 million in 2016- 2017. However, despite being the top donor, the USA is the worst affected country by the COVID-19 pandemic with almost 19

million cases within the country. The management of the pandemic requires coordination of many federal agencies. The organization which is leading the medical response in the USA is part of the Department of Health and Human

Services, Centres for Disease Control and Prevention (CDC). The CDC, as one of the main responders, provides information and recommendations regarding the vaccine to the general public. CDC does not have a role in its development, it does play a major role in running vaccination programs for adequate administration and distribution to the general population.<sup>46</sup> The Moderna and Pfizer-BioNTech, 2 out of the 3 approved and recommended vaccines are developed in the USA. NIH's (National Institute of Health) National Institute of Allergy and Infectious Diseases is the main research agency which has taken the lead on holding clinical trials, conducting lab research on the coronavirus and testing antivirals. The Trump administration was criticized heavily on its mismanagement of the Covid-19 pandemic, due to its ignorance and discreditation of credible scientific research in many instances.<sup>47</sup> The delay

in response to the spread of the virus due to the government's downplaying the coronavirus as a distant harmless flu strain which is well under control has led to cost 414,000 lives, despite being one of the most equipped countries to tackle the pandemic. The government was witnessed banning incoming travelers from the most affected countries in the early stages of the pandemic, but the issues regarding shortage of funds to maintain the supply of critical medical equipment and the offshoring of the manufacturing of such medical equipment to countries like china further escalated the spread of the virus.<sup>48</sup> The Biden administration, with a new response team, promises that their first 100 days might not end the virus but they will focus on mass vaccination, a stricter enforcement of rules regarding safe distancing and masking, and also focus on the safe opening of schools for children.<sup>49</sup>

## INDIA

With over 10 million cases and 150 thousand deaths, India has admitted to be the second worst hit country by the COVID-19 pandemic. The Ministry of Health and Family Welfare <sup>50</sup> is the department of the Indian central

government that leads the response for the government by providing the latest scientific updates regarding the virus's development and progression in the country. It aims to raise awareness within the general public, travel

<sup>46</sup> "U.S. Coronavirus Response: Who's in Charge of What?," Council on Foreign Relations, 2020, <https://www.cfr.org/article/us-trump-coronavirus-response-covid19-agencies-in-charge>.

<sup>47</sup> Yasmien Abutaleb et al., "The U.S. Was Beset by Denial and Dysfunction as the Coronavirus Raged," Washington Post (The Washington Post, April 4, 2020), <https://www.washingtonpost.com/national-security/2020/04/04/coronavirus-government-dysfunction/?arc404=true>.

<sup>48</sup> Philip A Wallach and Justus Myers, "The Federal Government's Coronavirus Response—Public Health Timeline," Brookings (Brookings, March 31,

2020), <https://www.brookings.edu/research/the-federal-governments-coronavirus-actions-and-failures-timeline-and-themes/>.

<sup>49</sup> ANI, "President-Elect Biden Announces New Health Team to Manage Covid-19 in US," @bsindia, December 9, 2020, [https://www.business-standard.com/article/international/president-elect-biden-announces-new-health-team-to-manage-covid-19-in-us-120120900079\\_1.html](https://www.business-standard.com/article/international/president-elect-biden-announces-new-health-team-to-manage-covid-19-in-us-120120900079_1.html).

<sup>50</sup> "MoHFW | Home," Mohfw.gov.in, 2020, <https://www.mohfw.gov.in/>.

advisories and resources for citizens, hospitals, businesses and schools. Many experts have criticised the 21 day nationwide lockdown and have deemed it as a blunt tool and a temporary measure to increase preparedness and slow down the cases of the virus, but it only resulted in greater loss of lives than saved. The lockdown largely disrupted the food supply chain and also impacted migrant workers, as they had to deal with the sudden loss of income, food shortages and sheer uncertainty for their future. The country's inability to respond is blamed on its underinvestment and neglect of public health, with one of the lowest allocation<sup>51</sup> at 3.54% of its Gross Domestic Product on healthcare in 2018, compared to South Korea at 7.56%, the USA at 16.89% and New Zealand at 9.21%. Despite being the world's second worst hit country, it has experienced one of the lowest death rates of only 1.5% compared to the USA at 2.8%.<sup>52</sup> Experts claim the reason to be India's young population with a median age of 28.4, the strict lockdown, underreporting and the possible immunity due to other viral diseases such as the dengue fever endemics and cross-immunity provided by the exposure of various pathogens to the low and middle income population living in unsanitary environment and lack of clean water.<sup>53</sup> Currently, India is embarking on "one of the world's most ambitious mass immunization programs", with The Serum Institute of India, the world's largest vaccine maker leading the manufacturing of the

AstraZeneca and Oxford vaccine and another locally conceived vaccine by Bharat Biotech called Covaxin which has been given emergency approval without the efficacy data from late stage clinical trial. The government claims that self reliance in the production and manufacturing of the vaccine is its biggest strategy, which has allowed 1

<sup>51</sup> "Covid-19: Indian Healthcare Workers Need Adequate PPE - the BMJ," The BMJ, June 19, 2020, <https://blogs.bmj.com/bmj/2020/06/19/covid-19-indian-healthcare-workers-need-adequate-ppe/>.

<sup>52</sup> "Current Health Expenditure (% of GDP) | Data." 2021. Worldbank.org. 2021. <https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS>.

<sup>53</sup> hermesauto, "The Mystery of India's Low Coronavirus Death Rate," The Straits Times, October 11, 2020, <https://www.straitstimes.com/asia/south-asia/the-mystery-of-indias-low-coronavirus-death-rate>.

million of its population to be inoculated within 6 days.<sup>54</sup>

## LATIN AMERICA

Latin America is experiencing one of the highest COVID-19 death rates in the world. While the discussion might be centered around Brazil's president Jair Bolsonaro's errors in managing the pandemic, the whole region seems to be facing a humanitarian crisis - a crisis borne out of the long standing inequality in healthcare, income and education, social unrest, corruption and political instability woven into the economic and social fabric of the region.<sup>55</sup> With Brazil and Mexico topping the list of the highest number of cases, however, reports do reveal that most of the countries are severely under counting their death tolls. The Pan American Health Organization (PAHO)<sup>56</sup> which is a specialized health agency of the Inter-American System and also acts as a regional office for the Americas of the WHO, is one of the primary responders of the COVID-19 pandemic. One of the main reasons for this high positivity rate include the politicization of one of the basic policies such as mask wearing and social distancing that is essential to curb the spread of the virus. The federal government of countries such as Brazil only invested 30% of its emergency resources available for the health policies to control the adverse negative consequences of the pandemic,

moreover priority was given to large companies at the expense of medium and small sized firms. Countries in Latin America were criticized in terms of the lack of monitoring the virus and forming an efficient framework in order to understand the spread of the virus which is necessary to form effective strategies and policies to limit its spread. Moreover, instead of opting for RT-PCR tests, Brazil was seen to opt for "rapid" serological tests even if they are proved to be less effective means for COVID-19 diagnosis, leading to an inaccurate measure of the

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<sup>54</sup> Vedika Sud and Nectar Gan, CNN, "Country Has 2nd Highest Covid-19 Cases. See Their Vaccine Plan," CNN, January 4, 2021, <https://edition.cnn.com/2021/01/04/asia/india-vaccine-roll-out-intl-hnk/index.html>.

<sup>55</sup> The Lancet, "COVID-19 in Latin America: A Humanitarian Crisis," *The Lancet* 396, no. 10261

(November 2020): 1463, [https://doi.org/10.1016/s0140-6736\(20\)32328-x](https://doi.org/10.1016/s0140-6736(20)32328-x).

<https://fas.org/sgp/crs/row/IF11581.pdf>

<sup>56</sup> "Who We Are - PAHO/WHO | Pan American Health Organization," Paho.org, 2018, <https://www.paho.org/en/who-we-are>.

spread of the virus, further escalating its effect on the mortality rate.<sup>57</sup>

## SOUTHEAST ASIA

Indonesia is currently the worst affected country by the virus in the region with more than a total of 772 thousand cases. Thailand was the first country reporting cases outside China in early January of 2020, and is currently experiencing a second spike in cases with almost 4 times the cases experienced in the first wave. While Thailand and Indonesia have tightened restrictions to contain the virus<sup>58</sup>, Vietnam, Taiwan and Singapore have slowly and successfully moved towards a new normal<sup>59</sup>, which involves the continual of practicing protective measures but allowing “business as usual” for firms with half attendance of employees at workplace, hybrid teaching in universities and schools. Experts point out that their experience with the 2003 SARS outbreak has shaped their healthcare systems to better handle the current COVID-19 pandemic. The key strategy for these 3 countries has been to act immediately, and make their population quarantine centrally in

government supervised locations instead of asking people to self isolate, allowing for the prevention of imported cases from leading to a second surge in cases.<sup>60</sup> Moreover, systems such as the DORSCON (Disease Outbreak Response System Conditions) alert levels developed by the Ministry of Health Singapore is one of the examples of tools employed by these countries in handling the pandemic effectively. The DORSCON level, which has 4 levels (green, yellow, orange and red), the colours entailing the severity of the spread, its impact on the daily life of the general population, and the advice from the health experts of the government depending on the DORSCON level.<sup>61</sup> This acts as an efficient framework or guide for the government to better understand its spread and hence design better and more reasonable policies to either ease or tighten measures and restrictions to curb the spread of the virus.

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<sup>57</sup> “Who Is Responsible for Brazil’s COVID-19 Catastrophe? | LSE Latin America and Caribbean,” LSE Latin America and Caribbean blog, November 13, 2020, <https://blogs.lse.ac.uk/latamcaribbean/2020/11/13/who-is-responsible-for-brazils-covid-19-catastrophe>

<sup>58</sup> TAN HUI YEE, “Thai PM Eases Bangkok City’s Order for Restaurants to Limit Dine-in Hours,” The Straits Times, January 4, 2021, <https://www.straitstimes.com/asia/se-asia/thailand-reports-745-new-coronavirus-cases-one-new-death>

<sup>59</sup> “COVID-19 the New Normal | WHO Singapore,” Who.int, 2020,

<https://www.who.int/singapore/emergencies/covid-19-in-singapore/information/the-new-normal>.

<sup>60</sup> “Why Singapore, Taiwan and Vietnam Have Been Effective in Fighting COVID-19,” Asialink, June 16, 2020, <https://asialink.unimelb.edu.au/insights/why-singapore,-taiwan-and-vietnam-have-been-effective-in-fighting-covid-19>.

<sup>61</sup> What do the different DORSCON levels mean, “What Do the Different DORSCON Levels Mean,” Wwww.gov.sg, 2020, <https://www.gov.sg/article/what-do-the-different-dorscon-levels-mean>.

## CHINA

China was the location of the breakout of the coronavirus. It has widely been condemned for its actions during the onset of the virus, which involved passing off the virus as simply being pneumonia, and preventing any whistleblowers from exposing the truth about how dangerous this new virus really was. A study shows that if Chinese authorities had taken measures to inhibit the spread of the virus three weeks before Wuhan's first lockdown on January 23rd, the number of infections in Wuhan could have been reduced by 95%.<sup>62</sup> Unfortunately, this wasn't the case, as China did not notify the WHO about the outbreak, which is something that all member states of the UN organ are required to do. National health officials responded to the outbreak by conducting a nation-wide case detection effort, but this did not achieve much except establish that the virus was highly transmissible. On the positive side, while

the nation was able to develop testing kits for the virus in record time, it also performed genome sequencing of the virus and released details regarding this for other nations to use in globally accessible databases. This would be useful for other countries to identify the virus and would also aid vaccine-development efforts. Additionally, it has provided two installments of \$50 million as aid to the WHO and has sent over 29 medical teams to 27 countries and offered anti-pandemic aid to over 150 countries and 4 international organisations.<sup>63</sup> The country has also not fallen behind in vaccine development, with Sinopharm having developed a vaccine that has been approved for widespread use in the United Arab Emirates. President Xi Jinping also announced at the 73rd World Health Assembly that after his nation's vaccine was widely administered nationally, it would serve as a global public product.<sup>64</sup>

## EUROPEAN NATIONS

The WHO has, on multiple occasions, declared Europe as the global epicenter for the spread of COVID-19. Additionally, the second, more transmissible strain of the virus was found to have originated in the UK, which, along with other nations such as France, Italy, Spain and Germany, has been among the worst hit

countries worldwide. The EU's response to the virus was divided into 4 main points of action. These included limiting the spread of the virus (which would be achieved by implementing measures such as promoting facial masks and encouraging sanitation), ensuring the provision of medical equipment

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<sup>62</sup> Jamie P Horsley, "Let's End the COVID-19 Blame Game: Reconsidering China's Role in the Pandemic," Brookings (Brookings, August 19, 2020), <https://www.brookings.edu/blog/order-from-chaos/2020/08/19/lets-end-the-covid-19-blame-game-reconsidering-chinas-role-in-the-pandemic/>.

<sup>63</sup> "China's Role in the Global Fight against COVID-19," Cgtn.com, 2020,

<https://news.cgtn.com/news/2020-11-19/China-s-role-in-the-global-fight-against-COVID-19-Vy6ZdYpLb2/index.html>.

<sup>64</sup> "China's Role in the Global Fight against COVID-19," Cgtn.com, 2020, <https://news.cgtn.com/news/2020-11-19/China-s-role-in-the-global-fight-against-COVID-19-Vy6ZdYpLb2/index.html>.



(primarily to healthcare workers), promoting research for treatments and vaccines, and supporting jobs, businesses, and the economy. Emphasizing the fourth goal, in April 2020, EU leaders endorsed a 540-billion-euro package which was targeted at reducing unemployment, supporting businesses, and managing the spread of the pandemic. Regarding its third goal, as of now, European companies such as BioNTech and AstraZeneca already have working vaccines and the EU is working on ensuring that more of these are clinically tested and administered.

In the summer of 2020, as the cases plateaued, half or more of those surveyed across the EU approved of their nation's efforts to manage the pandemic,

ranging from 54% in Spain to 95% in Denmark.

However, with the spike in cases across the EU that closely followed, several key interventions in the EU (barring Germany) were delayed. The adoption of government recommendations by the general public was poor due to lack of surveillance and stringent law-enforcement. Further, the health systems of a majority of EU nations had been considerably weakened over the past decade or so due to systemic issues.

Such factors undermined the EU's policy-making efforts in practice, and a year into the crisis, the 5 biggest EU nations had already amassed around 200,000 cases.

## QUESTIONS A RESOLUTION MUST ANSWER

In order for the global community to emerge stronger from COVID-19 and improve its future response, this committee will have to draft a resolution aimed at the modification or complete redrafting of the existing WHO guidelines to pandemic management based on the successes and failures of the WHO's response to COVID-19.

1. What are the policies behind the successes in the responses of both the WHO and individual countries to COVID-19?
2. What are the policies/actions behind the failures and valid criticisms of the responses of both the WHO and individual countries to COVID-19?
3. What guiding principles of pandemic management can be inferred from the responses of both the WHO and individual countries to COVID-19?

4. What are some interventions (in the form of improvements or additions to either policy or implementation) that can address the failures and valid criticisms of the responses of both the WHO and individual countries to COVID-19?
5. How can such interventions be either universalised or customised to be globally applicable?

## ENDNOTES

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2. <sup>1</sup> “WHO | Global Strategy: Overall Goal,” *Who.int*, October 6, 2014, <https://www.who.int/dietphysicalactivity/goals/en/>.
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4. <sup>1</sup> World Health Organization: WHO, “Q&A: How Is COVID-19 Transmitted?,” Who.int (World Health Organization: WHO, July 14, 2020), <https://www.who.int/vietnam/news/detail/14-07-2020-q-a-how-is-covid-19-transmitted>.
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# TOPIC 2: TECHNOLOGY AND ARTIFICIAL INTELLIGENCE IN HEALTHCARE

## SUMMARY

The utilisation of artificial intelligence in healthcare is certain to cause a paradigm shift in the medical field. AI conventionally has medical applications for a myriad of cancers, cardiopathies and neuropathies. It can further be applied to aid mental health, prosthesis, and telemedicine delivery. Its primary functions are in early disease detection and diagnosis, monitoring, and treatment.<sup>65</sup>

However, the advent of new technology in any field is accompanied by a need to assess its risks and rewards in order to create new regulations and legislation in tandem with it. There are several privacy and security concerns associated with the intersection of AI and healthcare since it is facilitated by the abundance of personal medical data available to AI systems in today's world. It also broaches the crucial ethical subject of doctor-

patient confidentiality. Further, given its wide applicability, there is discussion around whether such systems could potentially replace physicians in the near future. This might translate into a change in the skill sets required of medical professionals. Additionally, given the dynamic nature of technology and AI in specific, there is a need to ensure that legislation and global regulations keep up with the rapid progress in the field, and there are varied views on how this is to be actualised.

These form only some of the many arguments the international community must settle before a controlled adoption of AI and other technology in healthcare becomes viable. Therefore, this committee aims to deliberate on the applications, risks, and potential global regulations to be placed on the use of artificial intelligence in healthcare.

## INTRODUCTION

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Artificial intelligence (AI) is a novel technology that is playing an increasingly important role in our lives. Machines with intelligence comparable to that of ordinary humans would have seemed fictitious a few decades ago but this phenomenon is quickly turning into reality. AI models make rational and accurate decisions as compared to humans, leaving a very low margin for error. They can also perform tasks ordinarily done by humans significantly more efficiently. However, the cost of this technology, as well as its lack of creativity, are among some of the problems associated with AI. Additionally, the replacement of humans with AI to perform simple or monotonous tasks can result in increasing unemployment rates.<sup>66</sup> With all this in mind, here are some ways in which technology and AI are currently used in healthcare.

Technology in general has been used in healthcare for quite a while since it has enabled increased accessibility of treatments to more people, and the treatment itself has been enhanced by integrating technology into ordinary processes. For example, the quality of care has been significantly improved for patients and has also been made more efficient for healthcare providers since nurses and doctors can use technological devices such as hand-

helds to record important data that can be centralised to improve access and also provide more timely and accurate aid to patients. More specifically, however, artificial intelligence has its own set of diverse applications that have benefited healthcare worldwide.<sup>67</sup>

AI based robots are used in performing surgery since these are less invasive and lead to far fewer complications than those performed by humans. AI robots have also been used as virtual nursing assistants, as they are available at all times of the day and can provide quick and accurate answers. They are also used to monitor the health of patients. Additionally, AI has been used for diagnosis and for judging the clinical condition of patients. In some cases, AI has proved to have a higher success rate identifying patients with conditions such as cancer and even cardiac arrest. AI has also been used to a large extent in performing administrative work such as creating prescriptions and treatment plans much faster than humans, improving work efficiency. Finally, it has been used in image analysis, sometimes capable of providing the optimal treatment simply by looking at the picture of a rash, cut or a bruise. And following the general trend of AI, it does this much faster than humans are capable of doing it.<sup>68</sup>

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## BACKGROUND

Within the United Nations system, WHO plays an essential role as the coordinating authority on public health. It works on providing guidance, boosting capacity, moulding the research agenda and engaging the stakeholders to gain funds and more importantly improving on the ethical foundations of artificial intelligence and other assistive technologies used in healthcare. Previously, WHO has successfully engaged and consulted governments, industries, academia, civil society and inter-governmental agencies to help rationally develop and design guidance and information for the better implementation and understanding of scope of artificial intelligence on healthcare. The participants included medical practitioners, ethicists, lawyers and technologists who provided their expertise on the different uses of AI in healthcare, such as drug discovery, public health and clinical medicine. They also provided their insights on current and potential issues regarding the application of AI on healthcare, such as human rights, privacy, data ownership, underlying bias, opportunity cost of choosing technology at the expense of human intelligence and inequality present in representative

data, and discussing the possible solutions for each of these issues.<sup>69</sup>

These expert groups rather focus on the issues which arise when AI technologies are implemented and in the improvement of its robustness, rather than the legislative and legal issues that arise in order to implement it in different regions.<sup>70</sup> The expert group emphasized on the responsibility of the general public, the government and the stakeholders on being well versed with the safety mechanisms and “a basic artificial intelligence literacy” to be fostered across the society. Moreover, as the use of artificial intelligence is not limited to a nation’s borders, the expert group recommends countries to shape their policies and develop strategies which will address issues which might emerge due to the technologies crossing international borders. WHO also links the use of AI and assistive technologies in healthcare to the Sustainable Development Goals (SDG), elaborating on how its implementation can help to achieve SDG 3 i.e. to “ensure healthy lives and promote well-being for all ages”, and call countries to focus on using SDGs as a guide to make healthcare more safe, affordable, and achieving universal and fair health coverage through technologies such as AI.<sup>71</sup>

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To better understand the role of WHO in improving the extent of use of AI in healthcare, it is essential to acknowledge the ways AI has been used to strengthen health systems. The increasing search in the internet for health related information and the rise in use of wellness applications has offered an unique opportunity for individuals to manage their own health. This upsurge has led to large amounts of health data being constantly generated by the users and captured by the service providers. WHO, in its 2019 bulletin considered it “an asset to transform health care and global public health”. This large amount of data is used for machine learning, through the continuous refinement of the algorithm.

The main focus of WHO is to solve the ethical issues that arise from the collection, storage, use and sharing of such a large amount of data. WHO has called for the submission of research publications which cover topics from ethical to governance issues, and papers addressing how implementation of AI in healthcare will be different in low- and middle-income countries.<sup>72</sup> The delegates are encouraged to explore and solve the lack of specificity of the guidelines to the context of the use of technologies in healthcare, absence of specific legislative and implementation guidelines, and address the generalized nature of the advice provided by the expert groups from WHO.

## DEFINITIONS

- **Artificial Intelligence:** The capability of a digital computing system to perform tasks usually performed by “intelligent beings”.<sup>73</sup>
- **Big Data:** Extremely large data sets that may be analysed computationally to reveal patterns, trends, and associations, especially relating to human behaviour and interactions.<sup>74</sup>
- **Machine Learning:** Machine learning is the ability of a computing system to learn and adapt to fresh information without human involvement.<sup>75</sup>

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## SCOPE OF DEBATE

In today's world, countries are either far away from, accelerating towards or already in the era of digital healthcare. This is because each nation supports a different stance on the need for and implementation of AI and other technology in healthcare. In order to create some global consensus on the matter, the following concerns illicit international deliberation while determining whether AI and technology should be incorporated into the healthcare industry in the first place, and the kinds of regulations countries must consider incorporating into their legal systems if so:

### PATIENT DATA AVAILABILITY

Any artificial intelligence system requires a large data pool. However, data in the healthcare industry tends to be fragmented and incomplete, with patients switching healthcare providers, and insurance companies, consulting with different physicians at different hospitals, employing a mutable range of

technological devices and portals. Consequently, such AI systems are more prone to errors, less comprehensive, and incredibly expensive (which can make it infeasible in less technologically advanced nations).<sup>76</sup>

### PATIENT HEALTHCARE DATA PROTECTION

With the increased usage of social media, wearable health and fitness trackers, health apps, etc., the world has outgrown the concept of privacy in personal health data. Several such technologies both collect and distribute the patient's personal health data to a variety of sources for their independent use (Eg:

advertisers and developers), often without the patient's consent.<sup>77</sup>

Third parties such as employers, insurance companies, lenders, etc. can obtain an individual's past, present, and potential future medical information from data brokers, and utilise it in their decision-making processes, thus

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<sup>76</sup> W. Nicholson Price II. 2019. "Risks and Remedies for Artificial Intelligence in Health Care." Brookings. Brookings. November 14, 2019. <https://www.brookings.edu/research/risks-and-remedies-for-artificial-intelligence-in-health-care/#:~:text=Injuries%20and%20error.&text=If%20an%20AI%20system%20recommends,the%20patient%20could%20be%20injured..>

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opening them up to discrimination as such third parties typically look to invest in individuals who were healthy in the past, are currently healthy, and are likely to remain healthy in the future. This information flow is made possible as data brokers do not require patient consent to disclose such details to third parties. Solutions aimed at countering such possibilities are the need of the hour to facilitate the use of AI in healthcare.<sup>78</sup>

## ETHICAL ISSUES OF AI IN HEALTHCARE

There are a few ethical issues in the use of technology and artificial intelligence in the field of healthcare.<sup>79</sup>

Firstly, patient confidentiality is the bedrock of the relationship between a physician and a patient. It creates an environment of trust essential to the sharing of personal information, medical history, and the patient's feelings, all of which contribute significantly to the physician's diagnosis. Therefore, without proper regulation, the patient's information may reach individuals who are not authorised to possess such knowledge, compromise the patient-

While the utilisation of data in and from healthcare technology has been progressing rapidly over the years, legislation on data protection has not been in tandem with said progression, even in technologically advanced nations. In less advanced nations, there is an absence of even rudimentary legislation on data protection in the healthcare field. Since data flows seamlessly across borders, there is a need for international regulations on patient healthcare data protection.

physician trust, and consequently, the diagnosis.

Secondly, AI could compromise patient autonomy, or the right of the patient to make decisions and have the final say on the healthcare they receive, without the influence of medical professionals.<sup>80</sup> Since there is an information asymmetry between a doctor and a patient, it is the duty of healthcare providers to keep patients informed of the diagnosis, testing options, treatment options, and medications, so they may have the information necessary to make a well-conceived decision. While AI generates incredible prognoses, it does not so far

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<sup>78</sup> Sharona Hoffman. 2019. "Artificial Intelligence in Medicine Raises Legal and Ethical Concerns." The Conversation. September 4, 2019. <https://theconversation.com/artificial-intelligence-in-medicine-raises-legal-and-ethical-concerns-122504#:~:text=But%20AI%20in%20medicine%20also,and%20the%20physician%20patient%20relationship>.

<sup>79</sup> "St. Patrick's College London." 2019. StPatrick. 2019. <https://www.st-patricks.ac.uk/blog/posts/2019/october/an->

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<sup>80</sup> Bernstein, Carolyn A. 2018. "Take Control of Your Health Care (Exert Your Patient Autonomy) - Harvard Health Blog." Harvard Health Blog. May 7, 2018. <https://www.health.harvard.edu/blog/take-control-of-your-health-care-exert-your-patient-autonomy-2018050713784#:~:text=Patient%20autonomy%3A%20The%20right%20of,the%20decision%20for%20the%20patient>.



have the capacity to explain or justify the algorithms and models that help it arrive at a particular prognosis. In some cases, data privacy laws would preclude an AI system from revealing the data that guided its cognition. Therefore, in the case of an AI physician, the primary challenge would be keeping the patient informed sufficiently to reasonably allow for their autonomy.<sup>81</sup>

Thirdly, the concept of informed consent could be threatened with the increasing incorporation of AI in healthcare. In a traditional diagnostic scenario, a doctor must work with the information obtained with the informed consent of the patient. When used even as a mere tool by the physician in a diagnostic process, an AI system would take into consideration a range of information about the patient

before arriving at an optimal recommendation. Such information may have been obtained both voluntarily and involuntarily by accessing the patient's records. Therefore, AI might base its recommendations on information the patient didn't intend to form part of the decision process.

A final issue worth noting is that medical professionals often omit disclosing when their advice is based on AI guidance. So, the patient believes a recommendation to be the doctor's professional opinion and assessment based on a consultation. In that sense, the patient is kept in the dark of the source of the counsel, and their freedom to select a healthcare provider of their choice is effectively annulled.

## TECHNOLOGICAL BIAS

Artificial Intelligence systems are built on the data with which they are fed, and are thus prone to cognitive bias originating from their data sources. This bias can affect a variety of processes such as data recording, data comparison, prescriptions, diagnosis, tracking, standardisation, etc. because if the data fed to the system doesn't represent diverse target groups, it might not be applicable to every patient. At its most harmless, a bias can render AI intervention ineffective, but at its worst, it could lead to incorrect and fatal recommendations.

For example, if the data source is the military, AI wouldn't yield effective or accurate results for female patients, as a

majority in the military are male. Another illustration could be if the data source is a fairly developed nation, the AI system may not have the data required to adequately diagnose and address certain infectious diseases endemic to developing nations. Therefore, there is a need for solutions at a global level to incorporate diversity (economic, cultural, humanitarian, etc.) and eliminate bias in artificial intelligence systems in healthcare, a field in which

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<sup>81</sup> Beil, Michael, Ingo Proft, Daniel van Heerden, Sigal Sviri, and Peter Vernon van Heerden. 2019. "Ethical Considerations about Artificial Intelligence for Prognostication in Intensive Care." *Intensive*

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biases can skew diagnoses considerably.<sup>82</sup>

## THE SCOPE AND RISK TO HEALTHCARE JOBS UNDER THE EFFECT OF AI

With the accelerating increase in use of AI in the healthcare industry, the big question is how AI will affect job prospects in healthcare.<sup>83</sup> As of 2016, the world already faces a deficit of 9.9 million healthcare professionals (preceding COVID19) according to the WHO. The healthcare sector has one of the lowest estimated potentials of automation at 35%

However, this could still contribute to alleviating the burden of the workforce gap. That said, with the advent of AI, the work of medical professionals will certainly change, which requires them to be equipped with an altogether different skill set. The need for memorisation and dexterity could be replaced by the need for innovation, a spirit of continuous learning, and multidisciplinary skills. There is further a need for cross-trained professionals who can play a 'hybrid role' and further integrate the two fields of medicine and AI. Such dynamic requirements call for a systemic change in how individuals are trained prior to engaging in the field of medicine,

rethinking how individuals can be attracted to take up such roles which are the need of the hour, and developing a way to keep professional knowledge in pace with technology.<sup>84</sup>

The executive board strongly recommends a reading of McKinsey's article titled "Transforming healthcare with AI: the impact on the workforce and organisations" written by Spatharou, Hieronimus, and Jenkins, published on March 10th 2020. Having deliberated the necessary regulations in consideration of the above, delegates must proceed to consider how AI and technology can be increasingly adopted in the healthcare industry. This must of course be accompanied by a discussion on how to ensure that legislation in this area can keep up with developments in the fields of artificial intelligence and healthcare. It might also be prudent for delegates to briefly consider the impact that increased adoption of AI and technology into healthcare can have on the international community.

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<sup>82</sup> W. Nicholson Price II. 2019. "Risks and Remedies for Artificial Intelligence in Health Care." Brookings. Brookings. November 14, 2019. <https://www.brookings.edu/research/risks-and-remedies-for-artificial-intelligence-in-health-care/#:~:text=Injuries%20and%20error.&text=If%20an%20AI%20system%20recommends,the%20patient%20could%20be%20injured.>

<sup>83</sup> "November 2019 - Blog - next Generation." 2019. Nextgeneration.ie. 2019. <https://www.nextgeneration.ie/blog/2019/11ai-healthcare-industry>.

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## KEY STAKEHOLDERS

### UNITED STATES OF AMERICA

In the United States of America, the rapid flood of artificial intelligence startups have increased the market size of AI in healthcare from a compound annual growth rate of \$600 million in 2014 to 11 times higher or \$6.6 billion in 2021. These improvements to the health care system due to AI, i.e. through augmenting human activity, taking over activities such as medical imaging and the diagnosis of serious health conditions in radiology, by 2026 it will be able to potentially create a \$150 billion in annual savings for the US healthcare economy.<sup>85</sup> In the US, AI experts plan to use AI to improve quality, cost and access to healthcare, by having applications from Robot Assisted Surgery for the highest value of \$40 billion, Virtual Nurse Assistants, Fraud Detection to Automated Image Diagnosis.

As the use of AI and other technologies increase in the clinical space, risks involving regulatory, legal and ethical aspects also escalate. Hence the federal and the state law of the USA heavily regulate the companies which are handling such health technologies and AI. The US government agencies expect the companies using such technologies to abide by the laws governing the use of AI in medicine. The companies refer to

the state specific requirements for gain of licensure of performing surgery with the help of AI or using other technologies which might compromise patient interest due to privacy or ethical concerns. Moreover, the government expects that the treatment providers are compliant with the federal and state laws which govern the protection of patient data privacy and ownership.

However, one of the shortcomings of laws which still needs to be addressed is that it allows the practice of medicine through the help of assistive technologies and AI, but does not explicitly address the responsibility aspect of a bad outcome of the clinical operations. A study has shown that in the period of over 14 years in the US, assistive surgical robots have been linked to more than 144 deaths and 1000 injuries, which include broken instruments found within a patient's bodies and tissue burn caused by electrical sparks. Such ambiguity and gaps with the laws have led to a sense of doubt and uncertainty for the stakeholders of AI and other healthcare specific technologies.<sup>86</sup>

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<sup>85</sup> Meryl Kornfield, "The Health 202: Artificial Intelligence Use Is Growing in the U.S. Health-Care System," Washington Post (The Washington Post, July 17, 2020), <https://www.washingtonpost.com/news/powerpost/paloma/the-health-202/2020/02/24/the-health-202-artificial-intelligence-use-is-growing-in-the-u-s-health-care-system/5e52f13188e0fa632ba81ec7/>.

<sup>86</sup> BBC News, "Robotic Surgery Linked to 144 Deaths in the US," BBC News (BBC News, July 22, 2015), <https://www.bbc.com/news/technology-33609495>.

The U.S. Food and Drug Administration (FDA) which has the responsibility of regulating medical devices, has faced a major challenge in evolving its laws which were initially crafted to deal with medical devices from the 1970s. From the devices mostly focused on hardware, the current progression in advancement in technologies and introduction of AI has put the current framework of FDA to test

## JAPAN

An ageing society is one of Japan's biggest challenges and threats to its healthcare systems but can also be considered a result of its the most technologically advanced healthcare systems. Japan is the leader in AI adoption in healthcare with an investment of US\$100 million, which is making medicine more accurate and personalized. The Japanese government has established a new regulation, allowing private and public sectors to use anonymously processed medical data. The availability of such data has inspired many international businesses in combining this available data with their cutting edge technologies, helping Japan foster an innovative ecosystem and making medical care more precise and efficient, and create new treatment and drugs. Technologies like virtual reality and assistive robots (VR) have added a human factor to high tech solutions. VR is used to support and train medical and healthcare professionals and is largely used in mental health and psychological therapy for patients with

and leading the issues to be barely fitting the regulatory boxes. Hence, FDA has focused to improve its laws and regulatory frameworks by building a team responsible to update and create new laws and regulations to keep up with resolving the new issues caused by the technological developments in this dynamic field.<sup>87</sup>

dementia and PTSD (Post Traumatic Stress Disorder).<sup>88</sup>

In Japan, there is no specific comprehensive regulation of AI and other healthcare technologies, however some existing laws in the constitution may apply to the issues arising due to use of technology and AI in healthcare, related to personal data, intellectual property, privacy and criminal code. The debate is ongoing if the current legal framework is sufficient for the future implications of such technologies, the Cabinet Office have sought to create strategies and guidelines by creating a study group consisting of stakeholders from academia, private sector and industry to interpret the existing laws for

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<sup>87</sup> "FDA's Regulation of Artificial Intelligence," Jonesday.com, 2018, <https://www.jonesday.com/en/insights/2018/01/fdas-evolving-regulation-of-artificial-intelligenc>.

<sup>88</sup> "Virtual Reality in the Healthcare Industry," VISUALISE, September 22, 2017, <https://visualise.com/virtual-reality/virtual-reality-healthcare>.

the better and safe implementation of such technologies in healthcare.<sup>89</sup>

## CHINA

In 2017, China had announced to become the “world leader in artificial intelligence by 2030”. The approach of China to AI’s development and its implementation in healthcare is growing at a fast pace. China’s ageing population has led China to face many challenges in providing an easy, affordable and quality healthcare access to all.<sup>90</sup> Moreover, the outbreak of COVID 19 has exposed the cracks and pitfalls in delivery of healthcare services and the surveillance infrastructure in China, and hence one of the most effective solutions seems to be the development of telemedicine and digital patient management through AI and other assistive technologies. The AI aims

to help China in equalizing care and healing the discrepancies in healthcare access between the core metropolitan to rural areas.<sup>91</sup>

In 2019, the Centre for Medical Device Evaluation has addressed the issues which arise due to use of such technologies in healthcare by releasing a set of evaluation guidelines for AI making clinical decisions. However, China lacks the robust centrally agreed regulatory framework, which have led to high medical device registration costs for Chinese AI startups.<sup>92</sup>

## EUROPEAN BLOC

The projected compound annual growth rate (CAGR) of AI in the healthcare market in Europe has been projected at 35.45% from 2020-2028 according to

one report.<sup>93</sup> Major countries that are working on incorporating AI and technology into their healthcare systems include Poland, Belgium, Italy, the UK,

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<sup>89</sup> “Regulation of Artificial Intelligence in Europe and Japan | White & Case LLP,” Whitecase.com, August 24, 2020, <https://www.whitecase.com/publications/insight/regulation-artificial-intelligence-europe-and-japan>.

<sup>90</sup> “IDC Identifies China’s Emerging Healthcare AI Trends in New CIO Perspective Report,” IDC: The premier global market intelligence company, 2020, <https://www.idc.com/getdoc.jsp?containerId=prCHC46215920>.

<sup>91</sup> “AI Is Transforming China’s Healthcare Industry,” EqualOcean, 2020, <https://equalocean.com/analysis/2020082314614>.

<sup>92</sup> Caroline Meinhardt, “The Hidden Challenges of China’s Booming Medical AI Market,” China

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<sup>93</sup> “Europe Artificial Intelligence in Healthcare Market | Growth, Analysis, Size,” Inkwood Research, 2020, <https://www.inkwoodresearch.com/reports/europe-artificial-intelligence-in-healthcare-market/#:~:text=Report%20Summary-,The%20Europe%20artificial%20intelligence%20in%20healthcare%20market%20is%20set%20to,forecast%20period%2C%202020%2D2028.&text=The%20integration%20of%20big%20data,the%20market%20growth%20in%20Germany>.

Germany, Russia and France. The analysis of big data has been prioritised since it provides benefits such as improving real-time monitoring of patients and also analysing complex data in the field of genomics. It has also been used for identifying gene mutations in rare disorders and for prescribing the

optimum treatment to patients. The EU has raised concerns regarding how AI, while attempting to make accurate predictions, could end up discriminating based on factors like race. In spite of this, it is yet to come up with a concrete set of regulations to moderate the use of technology and AI in healthcare.<sup>94</sup>

## SOUTHEAST ASIAN COUNTRIES

A surge in healthcare startups as well as a growing demand for healthcare services in Southeast Asia have ensured that the incorporation of AI in healthcare has become a common occurrence. It is notable that Southeast Asian healthcare is lacklustre when compared to the global average across several metrics. For example, the top 5 ASEAN nations by population have 0.8 doctors per 1000 people compared to the global average of 1.5.<sup>95</sup> The use of AI in healthcare has seen a reduction in waiting times and improvements in personal care in order to meet the growing standards and expectations of healthcare services in

the region. However, many ASEAN nationals have recognised the dangers associated with the collection of personal data. China, for example, has a Cybersecurity Law which requires that international data transfer be subject to a security assessment. Similarly, South Korea has a Personal Information Protection Act which requires that companies obtain consent from users before collecting their personal data. Individuals also have the right to know who has access to their personal data, for what purpose they have this data, and the duration the data will be retained for under this act.<sup>96</sup>

## LATIN AMERICA

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<sup>94</sup> | Glenn Cohen et al., "The European Artificial Intelligence Strategy: Implications and Challenges for Digital Health," *The Lancet Digital Health* 2, no. 7 (July 2020): e376–79, [https://www.thelancet.com/journals/landig/article/PIIS2589-7500\(20\)30112-6/fulltext#seccestitle50](https://www.thelancet.com/journals/landig/article/PIIS2589-7500(20)30112-6/fulltext#seccestitle50).

<sup>95</sup> "AI Adoption in Southeast Asia's Healthcare Systems - MClinica," mClinica, October 2020,

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<sup>96</sup> "Artificial Intelligence in the Asia-Pacific Region Examining Policies and Strategies to Maximise AI Readiness and Adoption" (, 2020), <https://www.iicom.org/wp-content/uploads/IIC-AI-Report-2020.pdf>.



Similar to in Europe, the projected compound annual growth rate (CAGR) of AI in the healthcare market in Latin America has been set at 37.95% from 2019 to 2027 according to one report. Currently, AI is used in healthcare services to aid with analysing medical data, as well as the relationship between given treatment or prevention techniques and their outcome displayed by the patient. Big data is another aspect of AI used in healthcare systems in Latin

America. A large amount of data is generated by laboratories and medical research centers. Big data analysis is used in order to shorten hospital stay time, optimizing treatment plans, and identifying false claims on the internet. Latin American nations are still only beginning to implement technological solutions into their healthcare systems and have not yet begun to place any restrictions on this.<sup>97</sup>

## QUESTIONS A RESOLUTION MUST ANSWER

A resolution aimed at facilitating the incorporation of Artificial Intelligence and other such technology in the field of healthcare must answer the following questions:

1. Should the international community accelerate towards increased adoption of AI and other such technology in the field of healthcare, considering the risks and rewards?
2. What are some provisions that could address the concerns relating to artificial intelligence in healthcare?
3. What is the ideal progression for the increasing incorporation of artificial intelligence in healthcare?
4. How can legislation and international regulations on AI in healthcare keep up with the rapid progress in the field on an ongoing basis?

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<sup>97</sup> Research and Markets Ltd, "Latin America AI in Healthcare Market 2019-2027," Researchandmarkets.com, 2019, [https://www.researchandmarkets.com/reports/47](https://www.researchandmarkets.com/reports/4773789/latin-america-ai-in-healthcare-market-2019-2027)

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